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THE JOURNAL OF PHILOSOPHY

VOL. XXIV. NO. 5: MARCH 3, 1927

CONTENTS

Theory and Practise in Psychology: PERCY HUGHES 113

A Logical Study of Verbs: SUSANNE K. LANGER 120

Book Reviews:

Drake's Mind and Its Place in Nature: DOUGLAS C. MACINTOSH 129

Smut's Holism and Evolution: GEORGE P. CONGER 136

Journals and New Books 138

Notes and News 140

PUBLISHED FORTNIGHTLY
BY THE
JOURNAL OF PHILOSOPHY, INC.

THE JOURNAL OF PHILOSOPHY

All communications to the Editors should be addressed to Professor FREDERICK J. E. WOODBRIDGE, or Professor WENDELL T. BUSH, or Professor HERBERT W. SCHNEIDER, Columbia University, New York.

Subscriptions and advertisements should be sent to THE JOURNAL OF PHILOSOPHY, 515 West 116th Street, New York. The annual subscription price (twenty-six numbers) is $4.00 and the charge for single numbers is 20 cents. Advertising rates will be forwarded on application.

THE JOURNAL OF PHILOSOPHY is owned by The Journal of Philosophy, Inc., 515 West 116th Street, New York, and published at Lancaster, Pa.: President, Wendell T. Bush; Vice-President, Herbert W. Schneider; Treasurer, Frederick J. E. Woodbridge; Secretary, Iris W. Wilder.

Entered as second class matter, March 18, 1921, at the Post Office at Lancaster, Pa., under Act of Congress of March 3, 1879.

Literarische Berichte aus dem Gebiete der Philosophie

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Probeheft steht auf Wunsch zum ermässigten Preise zur Verfügung

Verlag Kurt Stenger, Erfurt

VOL. XXIV., No. 5. MARCH 3, 1927

THE JOURNAL OF PHILOSOPHY

THEORY AND PRACTISE IN PSYCHOLOGY

THIS is the second of three papers. In the first, "The Biotic Center of Psycholgy,"[1] I undertook to present psychology as a science distinct in data and purpose from any other, and at unity with itself. This I did by relating the several methods, schools, or factions of psychology, not to each other directly, but to a neglected center from which in fact they emerge and radiate.

This center deals, not with reactions, or with mental states, or with a "psychophysical organism," but with life-movement and with life-careers. It is the field worked by Galton, Freud, and Wilhelm Stern. Its data are presented in the form of narrative, life-history, and biography proper—data distinct in type from those with which any other science deals. Though it is from this field that the most significant conclusions of modern psychology have come, yet, because of the very uniqueness and novelty of its data and method, no attempt has so far been made to construct the theoretical foundations of psychology from this basis. All psychological theory, thus far, has commenced by identifying the procedure of this science with that of some other that is already familiar and accepted; for which reason, inevitably, some subordinate field has been pushed forward as the central study—to the general confusion.

In my first paper I did but sketch a picture of psychology reconstructed about this *biotic* center. Now from this center I commence the task of constructing a theory which may serve to harmonize and economize effort throughout the domain of psychology, and point it toward the aims which are proper to it. This task I first viewed as at least an amendment of our practise in teaching psychology; but now I incline to view it as a *necessary* transformation of the science itself. With this necessity I am impressed no less than with the difficulty and the pretension of the undertaking.

The first proposition is that the unity of any living thing exists only in its life-movement, which takes the form of a series or sequence of acts. The second is that this unity and life-movement can be observed and recorded only through the art of narrative and biography. A simple illustration is found in Miss Shinn's *The Bi-*

[1] Vol. XXIV, No. 4.

ography of a Baby. The baby *is* the life-movement which at first merely matures and reacts, then stares, looks around, recognizes, anticipates, perceives a world of things, and, by the fifth month, makes a sympathetic response to persons. This is the *unity* as distinguished from the totality of *conditions,* bodily and environmental, within which and by which the life-movement takes place.

In all life movement and life-career the individual *matures* and also *adapts*: but in human life the acts of maturing and adapting are, after the second week, *acts of attending.* While the life of the individual is by no means wholly attentive, yet, as matter of fact, narrative can only inform us concerning the life-movement of the human individual by noting the sequence of attentive acts: such incidents as unnoticed fatigue or bacterial infection enter the narrative only as conditions, which either affect later acts, or bear witness to the precise nature of preceding or simultaneous acts of attending.

This life movement of maturing, adapting, and attending is as objectively observable and verifiable as the falling of a body. In the falling body there is an *accumulation* of momentum visible and verifiable only in the resultant motion; in like manner there is in life-movement an *accumulation* of memory and of purpose based on acts of recognition and expectancy: which is observed, narrated, and verified in the total life-history.

These postulates of themselves distinguish psychological data and purpose from that of any other science; their significance, however, is only grasped when we proceed to lay down a postulate which is indeed essential to psychology, but which at first sight threatens to remove psychology from the domain of natural science altogether, since it seems to evade the need of objectively verifying the data of psychology. This is the postulate that into the life-movement of others, into their acts of attention and recognition, we have *something of immediate, intuitive insight.*

What this postulate means is well shown in Stern's story of his baby's "teasing game," which I narrated in the first paper. Such "teasing games," which produce and depend upon strictly mutual delight, *imply* no less than that there is an immediate and fundamentally correct interpretation of another's acts of attention in terms of one's own. No less is this implied in that sympathetic *rapport* which all who are free from physiological preconceptions observe in little children; and also in that impulse to *communicate* which finds its goal in the "*delight in identical recognition.*" Logically the implication is that the child knows that the other knows that the child knows that the other knows what the child attends to!

This escapes absurdity only by the greater absurdity of denying it. That this personal insight—immediate, intuitive—eludes physiological explanation and analysis may even encourage us to accept the postulate of its existence; for it begins to appear that *all* animal and human insight bears this reproach.

And, on further examination, we see that the task of verification is *not* evaded by this postulate; on the contrary, as in the case of other intuitions and insights (e.g., of order and of tridimensional space), the postulate only informs us of the path which the verification must take. In all such insights we err; but our errors are observed and corrected wholly by other acts of insight of the same sort; not by some transcendental criticism from physiology or elsewhere.

A *sixth* postulate is essential to psychological theory; and we are now prepared to welcome the fact that it is wholly alien to sciences that ignore the unity of persons apparent in their life-careers. This is the postulate that acts of attention increasingly refer to a world of *interpersonal* relationships, which are constituted by just such acts of four-fold or four-cornered personal insight as occur in "teasing games," in *rapport,* and in communication. We may call this the universe of "social recognition"; and we will admit that happiness and misery, sanity and insanity are at last determined by our relation to this secondary and derived world, rather than by our relation to the merely physical.

Now I have enunciated the six postulates which appear to me, at this stage of my inquiry, to be essential to any theory of that study of individual life-careers which in my first paper I called Bionomia. Through these postulates we may become convinced that psychology is at heart a distinct science, dealing with data incomparable with those of any other science, for a purpose all its own; but by methods of observation, generalization, verification, and application which it shares with every science. In this biotic center of the science inquiries arise which call for special methods in which the insight of the psychologist is combined with methods peculiar to some other science. These inquiries are then referred to one of three subsidiary fields which we may picture as arranged about our *biotic* center.

The meaning of this arrangement and structure of psychology may best be clarified by an illustration. Let us suppose that the subject of inquiry is the place of Euclidean geometry in the education of man. By education I understand the process by which the man himself through acts of attention transforms his life-career so as to attain a superior measure of fulfillment and realization. It

is then, obviously, in the metropolis of bionomia itself that we shall first debate our problem. We shall historically examine how individual men discovered geometric theorems and achieved the Euclidean system. This study will be strictly biographic, and not a mere history of the science. We may then consider the part this Euclidean system has played in the lives of other men—of great men, and of men who remained mediocre, and of men who were baffled in life. By methods familiar in all the sciences, of adopting and testing hypotheses, we seek a law; from observation we may turn to experiment, and seek to mould life-careers in terms of our generalizations. But we now find problems arising that arrest our further labor in this central field. These we must refer to the hinterland, to the subsidiary studies of psychological science.

The first problem concerns, apparently, the very structure of Euclidean demonstration. We wish the pupil to attain an ultimate insight, not only into the theorems of greater complexity, but into the nature of mathematical demonstration itself. Is the Euclidean structure suited to this end? Does it by "due steps" proceed from where the student is to where we would like him to be? We are irresistibly reminded of Koehler's carefully graded series of fifteen problems, by which he would train his apes to go as far as they can in the solution of such problems. In all seriousness, is it not apparent that what Koehler did with apes we do with students, when, by a logical analysis of subject-matter, we seek the steps that lead from the present knowledge and attitude of the student to the goal we set before him. This is *training,* and may be an important phase of education, but not all of it. It is the problem of curriculum building so far as that is a psychologic rather than an economic problem. More broadly, it enters into our whole conception of the way in which the social tradition affects the coming generation. But it is not a study of the life-movement itself, and therefore not of the strictly educative process, which deals directly and concretely with the life-career, in its sequence of attentive, creative acts.

Now this study of *conditions* through which men are *trained* to *insights* is exactly the study of configurations or *Gestalten,* which lately has found prominence. These configurations we find not only in the physical world, but also in that of social recognition—in the world of politics, sport, art, science, and morality, and in all personal relationships we may enumerate. However, the psychological study of configurations is not directly of these phenomena, but is of the *steps by which* persons may be trained to enter upon them with insight. The *Gestalt* psychologists are very clear in distinguishing their aim from that of other behaviorists, and their account fits in

precisely with that I here give. The difficulty that is so evident in relating *Gestalt* to other fields of psychology disappears at once when we see the problem of *Gestalt* arising directly out of the central study, Bionomia, and returning to it. *Gestalt* is a study of the configurative conditions of life in relation to possible insight; but it pays emphatically no attention to the processes which within the individual *constitute* his life-career, and in terms of which insight may be won.

The study of the *conditions* of life takes another form, which is familiar in the works of Thorndike and others of the older fashion of behaviorism. In our illustration, the learning of Euclidean geometry is a matter not only of developing insight, as above, but also of stimulation, response, and habit formation. In the last analysis, from this point of view, learning is a matter of conditioning reflexes, and I do not question that this point of view has some application to individual life-careers; however, the application is less important than is generally supposed. It has been disastrous to education that a vigorous publicity has identified the laws of conditioning reflexes with the laws of learning in general. To the acquisition of insight it has no apparent application.

By one more illustration I hope to make clearer the scope of this subsidiary field of psychology which deals only with the condition of life-movement, and not with the unitary life-movement itself. In our central study of a life-career arises the question how to *educate* in the use of number. We may then isolate the problem: by what arrangement of circumstances may we best *train* in the use of number. Then we shall detect within number the configurations of order, quantity, and ratio, and we shall discover that this is the right sequence in the securing of insight. But, in addition to this training in insight, we must train to the point of automatism; and to this end we study principles of response, habit formation, and drill. So, in controlling the conditions under which the life-movement proceeds, we utilize the two types of behaviorism: that which deals with the modification and automatization of response, and that which deals with the acquisition of insight.

But our problem, how best to influence the life-career of individuals through the Euclidean system of geometry, may be studied from quite another angle. We may inquire as to what processes or functions are best employed to this end. These are not conditions, but are *constituents* of the life-career; and our problem is not that of *training* through adaptation of circumstances, but *instruction* through exercise and development of function. Shall we exercise rote memory, logical memory, or reflective and inventive thinking?

And how? In such works as Dewey's *How We Think* this question is discussed through definition and analysis of these processes and functions.

This study of the functions and constituents of attentive life-careers can not be directly related to the preceding study of the conditions and circumstances of life-careers. Quite different concepts and methods of study are employed. Here causative factors are defined and named wholly in terms of their effects or outcome, whereas the conditioning factors in the organism and its environment are defined in terms of structure. Progress is here made not through a rearrangement of circumstances, but through a new analysis and definition of constituent factors. It is here assumed that functions are general in character, and that to exercise them means their development. Here mental discipline has meaning, but is not a problem, but an assumption: but in the field of responses, mental discipline has no meaning, and is not so much a problem as a confusion. Here there is no transfer of training, but merely a broader exercise and instruction of function: while in the study of *responses* there can be no transfer, since responses are not identical in different contexts. Where transfer is alleged, we invariably find a *function* surreptitiously introduced.

The confusion disappears only when we relate these two types of inquiry through the central field in which each takes its rise: the study of function arises out of the *constituent* factors of the unitary attentive life movement itself; while study of reflexes and of insights arises out of the circumstances and *conditions* in which that attentive life-movement takes place.

The work of the "structural psychologist" also arises out of the study of the *constituents* of the attentive acts of the individual. Looking backward these acts may be compared in terms of their experiential content. Recognition here is divorced from purpose, and attention becomes merely contemplative. So experience looks like a mere sequence of ideas, in which we note identical elements or qualities. In our study of the part Euclidean geometry may play in life-careers the structural psychologist helps but little. He may discuss the imagery employed, as Galton did, from many points of view, and the content of "general ideas." The method seems the most profitless, thus far, of psychological inquiries, and in fact arose from the interest taken in certain theories of knowledge, and continually points in that direction, rather than to application to problems in the life-careers of individuals.

The third field of subsidiary study in psychology also arises out of the central biotic investigation. In terms of our study of the

part played by Euclidean geometry in life-careers let us now consider neither the *conditions* by which the individual is trained, nor the *constituents* of his attentive activity which are instructed (developed), but rather the course of his actual achievements. This study is wholly a matter of testing; and though we are often said to test capacity, intelligence, etc., in fact we are testing always achievements—merely observing in what measure success in one type of achievement accords with success in another. By one such measure we may estimate the aptitude of the pupil for this Euclidean study, and by another his later attainment, and, by relating these two, measure his efficiency or rate of progress, which is again a sort of achievement. We can not test function, therefore, and the relation of the study of achievements to that of functions such as intelligence, etc., can be discovered only through referring both to the life-career of the individual. (In this connection, however, there has arisen an entirely different use of the term "function," which refers not to constituent processes of the individual, but to types of occupation in the social and industrial world. An underlying method of this subsidiary field of psychology is, indeed, the application of sociological concepts to the life-careers of individuals.)

Through defining the postulates of psychology in the field of its central inquiries I suppose that I have established its character as a science wholly distinct from any other; and by showing how from this central field arise three subsidiary types of inquiry I suppose that I have, in the first place, established the genuine unity of the whole field of psychological investigation. Moreover, I have indicated upon what allied or adjacent sciences these several subordinate fields border. This exposition, however, deals chiefly with the derivation of psychical laws; and there remains to discuss the technique of psychological application and practise.

"Applied psychology" is often an application of psychical laws, not to the life-career of individuals, but to the institutional procedure of schools, business firms, and states. But psychology properly may be distinguished, if we please, by the technique of application to the betterment or salvaging of individual life-careers. This latter type of application demands an attitude and technique so characteristic, that the distinction seems worth making; especially as the demands are really the same upon him who would insure sound biotic data for psychology, as upon him who would apply the laws that have been ascertained on the basis of those data to particular personal problems.

In both cases, the first demand is the disposition and power to

attain *rapport* with the subject, and the second is the constructive imagination which is able to view in true perspective the whole life career, and the relation of single acts to the total life movement. The third is knowledge of psychological laws, and the fourth is familiarity with historic method in the finding and weighing of evidence. In framing case-histories or biographies these elements of technique must be exercised through a considerable period during which the judgments made must be subject to the criticism of others expert in such work. Similarly, in suggesting methods to be applied to particular cases nothing takes the place of long experience under expert criticism. This view of psychological application alone gives distinctive character to the practical side of the science. The fact seems to be that in the *institutional* applications of psychological principles the best success quite commonly attends the man who is more conversant with the needs of the institution than with the methods of psychological laboratories or with "clinical psychology."

The full force of the argument for narrowing the use of the term "applied psychology" to such personal applications in education and "mental hygiene" and related practise, is evident, however, only as I am able to establish the last cornerstone of the psychological edifice, namely, that *psychology is distinctly normative and ethical,* without losing at all its claims to be a natural science. The argument for this position seems to fly in the face of current opinion and theory, but to me appears quite unescapable. It will be the theme of my third paper, "The Normative in Psychology and in Natural Science Generally."

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A LOGICAL STUDY OF VERBS

THERE is some uncanny property of verbs which seems to set them apart from all other types of grammatical expression; for all other words and word-complexes are used as names of one sort or another, but verbs are certainly not mere names of things, qualities, concepts, or anything else. Infinitives and participles are names for actions; but genuine verbs contain an element that makes them more than substitutive symbols. This "something more" is generally recognized as a special logical function of the verb—the function of assertion. But just in what respect it is logical, has never to my knowledge been explained.[1]

[1] Bertrand Russell in *The Principles of Mathematics* maintains that there is "assertion in a logical as opposed to a psychological sense"; but his definition of it is in terms of truth, which is a metaphysical and not a logical notion. See p. 49.

That verbs have a psychological force is evident from their indispensability in judgment. Idealists, pragmatists, and laymen proverbially confound propositions with judgments, just as they fail to distinguish between concepts and ideas. But logicians, especially of the mathematical sort, are not supposed to fall into such confusion. For them the verb is not necessarily an index to an act of judging, but a bearer of objective *truth* or *falsity*. The presence of a genuine verb sets the proposition, which is true or false, apart from the propositional concept, which is not.[2] And as truth, or falsity, respectively, belong to the whole proposition, only as a whole proposition, the verb acts as a sort of logical glue—holding the separable elements of the propositional concept together, and making them the inseparable elements of a proposition.[3] There are, then, two unexplained powers of the verb, (*a*) the introduction of truth values, and (*b*) the unification of the proposition.

The first of these peculiarities, if it has any logical basis, should be solved by a careful study in the structures of a proposition and of the analogous propositional concept. This is what Mr. Russell hoped to do in *the Principles of Mathematics:*

> There is the verb in the form which it has as a verb, . . . and there is the verbal noun. . . . By analyzing this difference, the nature and function of the verb will appear."[4]

But, in fact, this function of the verb *qua* verb does not appear; it is *felt,* of course, and can be pointed out, but can not be accounted for, because it seems to depend upon something other than structural difference. All analysis is formal, and in order to name a distinction between "Cæsar died" and "the death of Cæsar" we must discover either a difference of the concepts respectively in-

[2] *Princ. of Math.,* p. 48: " 'Cæsar died' and 'the death of Cæsar' will illustrate this point. . . . The death of Cæsar has an external relation to truth or falsehood (as the case may be), whereas 'Cæsar died' in some way or other contains its own truth or falsehood as an element."

[3] *Cf.* Dorothy Wrinch, "On the Nature of Judgment." (*Mind,* N. S., 44): "In a judgment, it is thought that the verb of the proposition must function as a verb and not as an ordinary constituent. Now there is a definite point in this criticism, and in bringing forward any theory of judgment the verb of the proposition must either function in a special way or some answer must be made to this criticism. In the propositional theory of judgment the verb functions in a special way. . . . Functioning as a verb and not as an ordinary constituent means, it appears, acting as a binder. Acting as a binder of certain constituents means making them a unity. Thus . . . the verb binds the elements of the proposition together into a unity."

See also B. Russell, *Princ. of Math.,* p. 50: "A proposition is, in fact, essentially a unity. . . . The verb, when used as a verb, embodies the unity of the proposition."

[4] P. 48.

volved, or a difference in their determinations by Mr. Russell. Neither in the verb nor in the proposition as a whole do we find other concepts than in the analogous verbal noun and propositional concept.[5] The difference between verbs and verbal nouns, and between propositions and propositional concepts or unasserted propositions[6] appears, then, to be other than a structural difference. And Mr. Russell has drawn this conclusion with perfect frankness:

> There appears to be an ultimate notion of assertion, given by the verb, which is lost as soon as we substitute a verbal noun, and is lost when the proposition in question is made the subject of some other proposition. This does not depend upon grammatical form; for if I say "*Cæsar died* is a proposition," I do not assert that Cæsar did die, and an element which is present in 'Cæsar died' has disappeared. Thus the contradiction which was to have been avoided, of an entity which cannot be made a logical subject, appears to have here become inevitable. This difficulty, which seems to be inherent in the very nature of truth and falsehood, is one with which I do not know how to deal satisfactorily.[7]

In the new edition of *Principia Mathematica* (App. C), he takes up the question once more and attempts to treat the proposition under two aspects, (*a*) as a fact in its own right, and (*b*) as an instrument in the apprehension or conveyance of a fact. In the latter case, the proposition is *used,* but not itself considered; in this sense it is "transparent." It has truth-value, which the proposition as a fact has not.

But to characterize a certain type of proposition—which we may call the "genuine proposition"—by its possession of truth-value is, of course, to drag in a metaphysical notion which must be an unwelcome stranger in the logical field. Yet Mr. Russell has expounded, I think quite conclusively, that between the "proposition as a fact" and the "proposition as a bearer of truth and falsehood" there is no *structural* difference. The difference, whatever it is, must lie somewhere else than in the formal properties of propositions. And this conclusion really puts the question of truth-value, and the closely related problems of meaning and assertion, definitely outside the scope of *Principia Mathematica*; for the material of logic, according to that inimitable classic, is the general forms of proposi-

[5] *Princ. of Math.*, p. 48: "It is plain, to begin with, that the concept which occurs in the verbal noun is the very same as that which occurs as verb. . . . By transforming the verb, as it occurs in a proposition, into a verbal noun, the whole proposition can be turned into a single logical subject, no longer asserted, and no longer containing in itself truth or falsehood. But here, too, there seems to be no possibility of maintaining that the logical subject which results is a different entity from the proposition."

[6] The unasserted proposition is a special case of propositional concept, as I intend to show at the end of this paper.

[7] *Princ. of Math.*, p. 48.

tion and the relations which obtain between these forms.[8] So the property which distinguishes the "proposition as a fact" from the genuine proposition is inevitably an extra-logical property.

The whole difficulty seems to me to lie in this limitation of logic to the study of *propositional* structures. Such logical problems as the nature of meaning (apart from psychology), the referents of negative propositions, truth, assertion, and related topics remain perfectly insoluble as long as we confine ourselves to the system of propositional forms. But if we allow our logical interest to cover forms of every sort, merely as forms, we shall find that there are innumerable systems, or patterns, in the world, of which the propositional system is merely a special one; that these patterns may be compared, and the systems which exemplify them may be brought into relation with one another, and the traditional "alogical" notions may be brought into the scope of logic as we include not only the relations of elements within one system, but the relations of certain systems to each other (relations such as similarity, analogy, etc.). Josiah Royce defined logic as *the study of types of order.* This is essentially the point of view I wish to advocate, that *logic is the study of forms as such,* regardless of content ("forms" is a somewhat less restricted term than "order").

"Orderliness and system," says Royce in his *Principles of Logic,* "are much the same in their general characters, whether they appear in a Platonic dialogue, or in a modern textbook of botany, or in the commercial conduct of a business firm, or in the arrangement and discipline of an army, or in a legal code, or in a work of art, or even in a dance or in the planning of a dinner. Order is order. System is system. Amidst all the variations of systems and of orders, certain general types and characteristic relations can be traced."[9]

If we treat the system of propositional forms as merely one formal system which may be compared with other logical structures, I think we shall have no need of any particular doctrines about truth, or resort to the psychological phenomenon of belief, to find perfectly definite relations between propositional structures and other structures, which are present whenever we deal with a genuine proposition and absent whenever we have a propositional concept. The apprehension of this relation, the recognition of *similarity* between propositional structures and certain non-propositional structures, is the basis of the "correspondence-theory" of truth and of those doctrines of meaning, the keynote of Ludwig Wittgenstein's

[8] Introd. to the 2d ed.

[9] In Windelband and Ruge, *Encycl. of the Phil. Sciences,* p. 73.

philosophy, to which Mr. Russell in large measure subscribes. This philosophy really presupposes the less restricted view of logic; but Mr. Wittgenstein's insistence upon taking the "atomic proposition" to be, so to speak, the unit of logical theory, does not allow him to honor as logic what is really his contribution to that subject. That is why meaning and assertion and truth, the essence of Proposition, live in the underworld (or superworld?) of Mysticism. Mysticism has ever been the graveyard for logical doctrines that have met their doom in Contradiction. But let us see whether there is not a resurrection for Mr. Wittgenstein's pet problems in the doctrine of "logical patterns."

Every thing, situation, idea, or what not, has a logical pattern; propositions follow such a pattern, and, as Royce has pointed out in the above quoted passage, all other things, from dialogues to dinners, have patterns of their own. Moreover, there are certain things whose forms correspond in large degree, as for instance the forms of similar series, such as the series of points in space and of moments in time. This correspondence of configuration may be so close that there may be serious doubt whether we are dealing with two analogous series or with an identical one—as, in the cited case, it has been suggested that there is really only one series, that of "point-instants." But we may have various degrees of correspondence. An air-plane view of a place and a topographic map (to use a now hackneyed example) are very similar, but a topographic and a political map of the same place probably coincide only in their larger features; a globe and a navigator's map are still remoter analogues.

It has been stated by Mr. Wittgenstein and elucidated for us by Mr. Russell, that this common element of formal structure is the basis of the meaning-relation; and although it has never to my knowledge been shown that this correspondence of configuration is the logical structure of *all* possible sorts of meaning—denotation, connotation, suggestion, "mnemic causation" or any other sort—it is a fact (for which I hope to produce the proof in the near future) that this *can* be shown, and, consequently, I think we may take Mr. Wittgenstein's somewhat sweeping generalization as, on the whole, a true account. I quote from Mr. Russell's recapitulation in his Introduction:

> In order that a certain sentence should assert a certain fact there must, however the language may be constructed, be something in common between the structure of the sentence and the structure of the fact. This is perhaps the most fundamental thesis of Mr. Wittgenstein's theory. . . . He compares linguistic expression to projection in geometry. A geometrical figure may be projected in many ways: each of these ways corresponds to a different lan-

guage, but the projective properties of the original figure remain unchanged whichever of these ways may be adopted. These projective properties correspond to that which in his theory the proposition and the fact must have in common, if the proposition is to assert the fact.

Mr. Wittgenstein begins his theory of symbolism with the statement (2.1): 'We make ourselves pictures of facts.' A picture, he says, is a model of reality, and to the objects in the reality correspond the elements of the picture: the picture itself is a fact. The fact that things have a certain relation to each other is represented by the fact that in the picture its elements have a certain relation to one another. . . .

We speak of a logical picture of a reality when we wish to imply only so much resemblance as is essential to its being a picture in any sense, that is to say, when we wish to imply no more than identity of logical form. . . . The sense in which he speaks of a picture is illustrated by his statement: 'The gramophone record, the musical thought, the score, the waves of sound, all stand to each other in that pictorial internal relation which holds between language and the world. To all of them the logical structure is common.'

If now we take, not a fact and a proposition which asserts it, but a fact and the corresponding propositional concept, we find that we have satisfied Mr. Wittgenstein's condition for meaning just as well as though we had dealt with a genuine proposition. Certainly "the death of Cæsar" refers to the same event as "Cæsar died." The difference between the two symbolisms is that the former may or may not be related to a natural fact, whereas the other, we feel, is so related, and the relation is somehow implied by its constituents, but not by its structure. Yet it is structure, not the nature of constituents, with which logic deals.

Now the structure of the two expressions, the proposition and the correlative propositional concept, which for convenience I shall call respectively p and p_c, is the same in a very precise sense, namely: that for every element in p there is an analogous element in p_c, and for every relation between the elements of p there is an analogous relation between elements of p_c; in other words, the pattern of the two systems is the same. But in the genuine proposition there is a symbol which does not affect the pattern itself; it is an element related to something *outside* the system which is the proposition. This element is the verb. Within the complex, the verb is related to every element of p exactly as the correlative verbal noun is related to the respective elements of p_c; therefore its presence does not alter the pattern. But over and above its character as a part of the proposition, it has the office of *relating the entire proposition to something else,* namely, the fact which is asserted. In Wittgensteinian phrase, the true verb symbolizes the relation between the picture and the fact. It has, therefore, a double function; (*a*) it relates certain elements within the system, and (*b*) it relates the system as a whole to another system as a whole. The *grammatical form* of the verb is the accepted symbol for this latter relation.

The fact that the symbol for this relation is traditionally incorporated in the verb, rather than in any other element of the proposition, has given rise to the belief that verbs are peculiarly related to truth and falsity. But the function expressed by the verb is not really a function of the verb; it is a function of the whole propositional construct. There are various less familiar ways of expressing it. We may, for example, take *a.R.b* to stand for a propositional concept, such as "Socrates' loving Plato"; if we would signify that *a.R.b* is to be related to some other complex, e.g., a complex of fact, we must add a symbol for this relation, such as the "assertion-sign," and write: $\vdash$ *a.R.b*. Here we have not altered the internal structure of the system. Now the sign $\vdash$ stands in no relation whatever to *a*, to *R*, or to *b*—nor even to *a.R.b*. It does not belong to the structure of the proposition.[10] It relates *a.R.b* to a complex whose existence is understood when we use the sign $\vdash$. And this is the meaning of the "purely logical sense of assertion" which Mr. Russell seeks to locate in the verb's "curious indefinable intricate relation to the other terms of the proposition which distinguishes a relating relation from the same relation abstractly considered."[11] This sort of assertion has, indeed, nothing to do with psychology, being a purely formal relation. As long as we limit our logic to the study of propositional structures, this relation will, of course, never appear; it is through the logic of forms as such—meaningless forms, or patterns—that the function of the assertion sign, which is the same as the extra-structural function of the verb, is exhibited.

We now come to the second mysterious agency of the verb, its alleged power to weld the proposition into a unity. Mr. Russell holds that "the verb, when used as a verb, embodies the unity of the proposition, and is thus distinguishable from the verb considered as a term, though I do not know how to give a clear account of the precise nature of the distinction."[12] But from our present point of view, the verb appears to do nothing of the sort. It is not a logical glue. Only because it relates *the structure as a whole* to another structure, it *presupposes* the unity of the structure. The case is analogous to a mathematical expression such as $(a + b)^2$. Here the exponent expresses a function of the unity $(a + b)$, but it does not create this unity—it presupposes the indivorcibility of the complex. The parentheses serve to signify the unity. If, then,

[10] That the assertion sign is not one of the symbols of the proposition was noted by Frege (*Grundegesetze der Arithmetik*, p. 43): Den Urtheilsstrich rechne ich weder zu den *Namen* noch zu den *Marken;* er ist ein "Zeichen eigener Art."

[11] *Princ. of Math.*, p. 84.

[12] *Princ. of Math.*, p. 50.

in a propositional concept such as "Socrates' loving Plato" we change "loving" to "loves," we express a function of Socrates-loving-Plato, and this function naturally presupposes the entire structure as a unit. But it does in itself act as the parentheses.

Thus it appears that the inter-structural relation expressed by the verb in a genuine proposition is the basis of (*a*) the verb's peculiar power of trafficking with truth and falsity, and (*b*) its alleged glutinous character. The former of these two points merits a little further consideration. Truth and falsity are, after all, metaphysical gods, not to be worshipped openly in the realm of logic. The question is, whether we can dispense with them here, or not.

Given any genuine proposition which is true, we have therein a system related to another system. The referent in this relation is the verbal or conceptual system which is the proposition, and the relatum is the system of *fact*. This saddles us immediately with a correspondence theory of truth, which I think Mr. Russell willingly accepts. But thereby he assumes all the burden of falsity, which leads him to psychological pitfalls of belief—the burden of negative facts—of mental facts which defy the familiar causal laws—of "poetic" truth and falsity—and finally of complexes which look sensible enough, but are meaningless concatenations of ink-spots or noises, such as "the present king of France is bald." All these metaphysical hoodoos seem to me to owe their existence in his logic to the fact that he conceives propositions as essentially true or false. The meanings of true and false propositions are *logically* nothing but objective systems of definite structure; that the structure referred to by true propositions happens to be the order of existence, is interesting for metaphysics, but irrelevant in logic. Propositions do usually refer to matters of fact, but not necessarily so—and even if this reference were universal, all that need concern us as logicians is that they refer to some structure other than themselves. This may be the structure of reality, as in assertions of fact, or of an imagined world as in the case of "poetic truth," or of carefully constructed beliefs as in hypothesis.

It will undoubtedly be noted here that the term "objective structure" has become ambiguous. In one sense, every word or phrase recognizable as a symbol refers to such a structure; for example, a false propositional concept such as "Hamlet loving Polonius" has a definite objective correlate among *thinkable situations,* and this correlate, like the symbol, is a structure. But when I say "Hamlet loved Ophelia," the symbol refers to a structure beyond the mere conceptual counterpart of the words; it refers to a structure which exists *in a definite consistent order,* and this order is Shakespeare's

Hamlet. This further reference to a whole order of constructs is what is implied by validity of a concept, or *logical assertion* of a proposition. We can certainly assert in a logical as well as a psychological sense that Hamlet loved Ophelia.

Herein lies the distinction between meaning and validity; a structure has meaning in so far as it refers to *any* analogous objective structure, and it has validity when its correlate has a definite place in a coherent order. The former relation is given by every symbolism and is that by virtue of which we have a *symbolism* at all; the latter is given by assertion, and might be termed the "propositional use of symbolism." Meaning in itself belongs to unasserted and invalid propositions, to propositional concepts, to names, and, in short, to signs of every sort and condition.

In symbolic expression we require the assertion-sign or some equivalent because we have no tacitly accepted difference in our symbolism to distinguish the proposition from the propositional concept. In common speech, however, we have worked out a general semantic for this purpose. It is not very precise, but it is usually well understood. The verb-form is its most obvious part. But since the verb has the dual function of relating terms of the proposition, and also relating the proposition to its object,—that is, since it combines the offices of the verbal noun and of the assertion-sign—we sometimes want to retain it for the former purpose without the latter. Our symbol for this exception is the inverted commas which mark an unasserted proposition in common discourse. The inverted commas have a function similar to that of the symbol "♮" of musical notation. They cancel a previously accepted function of the term they modify.

Psychologically, the inverted commas change our attitude toward the enclosed proposition; logically, *they change the proposition to a propositional concept.* The unasserted proposition functions exactly as a propositional concept. If we say " 'Cæsar died' is true," we are cancelling the truth-value of "Cæsar died," and assert the same proposition as "It is true *that Cæsar died,*" where "Cæsar died" becomes a subordinate construct in grammatical form as well as in meaning. Many logical puzzles, such as the difficult notion of the "proposition as a fact" in distinction from the genuine proposition, disappear when we realize that a "cancelled" proposition, a dependent clause, and a propositional concept are logically exactly on a par. The unasserted proposition, like the propositional concept, bears the same relation to the assertion wherein it figures, as, for example, $(a + b)$ bears to the whole expression $(a + b)-(c + d)$: and the verb in the unasserted proposition has a subordinate force

like the +'s in the above expression. Exactly the same relations are expressed in common language where the subordinate propositions are set apart by inverted commas or modifications of the verb, and the relation of the whole to some system in fact or fancy is implied by the "genuine" verb.

The extra-systematic function of verbs seems thus to account for many of the supposed "alogical" features of logic. The fact is, of course, that "logical" and "alogical" must always refer to a particular system of logic wherein we move. The alogical factors of meaning, truth, assertion, etc., which early beset Mr. Russell and recently drove Mr. Wittgenstein to Mysticism, appear to me to have sprung from the error of treating logic as essentially a study of *propositional* forms. But the logic which concerns itself with all sorts of forms allows for an analysis of structures *including* propositional forms, and promises to save some important logical relations from their present metaphysical limbo.

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BOOK REVIEWS

Mind and Its Place in Nature. DURANT DRAKE. New York: Macmillan Co. 1925. Pp. xvii + 259.

Professor Drake's new book is clearly and forcibly written, seems reasonably self-consistent, and will be accepted, I believe, as a creditable and workmanlike piece of philosophical writing. If as a result of this earnest effort to commend a particular philosophical creed to his fellow-philosophers he should fail to make many converts, the fault will lie much more with the doctrine expounded than with the exposition.

One of the first impressions readers who are at all familiar with Professor Drake's writings are likely to get from an examination of *Mind and Its Place in Nature* is that its author has himself at last experienced conversion from the more or less disguised dualism of his former theory of knowledge to a thoroughly monistic form of realism. In his doctor's dissertation, *The Problem of Things in Themselves,* published in 1911, the dualism is unmistakable. There it is roundly declared that the data of perception are "a different existence from the things." In the well-known cooperative work, *Essays in Critical Realism,* published in 1920, while it was indicated that some doubt existed in the group as to whether or not the position taken should be called a dualism, the view was expressed by Mr. Drake that by means of the analysis accomplished by the col-

laborating authors both epistemological monism and epistemological dualism were transcended. Now, however, he tells us that the combination of epistemological monism and realism can be reasonably maintained only on the basis of the theory presented in the volume under review. Realists who fail to distinguish data of experience from states of the knower are labeled "dualistic," and under this category Drake now places his former comrade in arms, Professor Lovejoy, to whose doctrine that our data are psychic existents he particularly objects.

Whether Professor Drake is in very truth an epistemological monist is a question to which we shall come presently. Meanwhile it may be remarked that probably one principal reason why the seven "critical realists" did not succeed in converting one another epistemologically was that they had resolved to ignore the rather wide differences which separated them metaphysically. Professor Lovejoy, believing in temporal but non-spatial mental events, may be supposed never to have felt any urgent need of the doctrine that data of perception are mere essences, neither mentally nor physically existent. But this doctrine of "essence," derived from Santayana, was hailed by Messrs. Strong and Drake as a veritable gospel of philosophical salvation. Not only did they feel that it would strengthen their claim to a genuine knowledge of independent reality; they doubtless noted with satisfaction that they could fit it into their already published metaphysical doctrine to the effect that all existence is spatial as well as temporal, and psychical as well as physical. In this view it is presupposed that the mental event, the effect of the stimulus received from a physical thing outside of our heads, exists in our heads; but the datum—standing like the abomination of desolation, where it ought not,—appears outside of our heads, where it does not really exist. Forced thus to conclude that whatever knowledge we can have by means of the datum can not be direct awareness of independently existing outer physical reality, but exploiting the common-sense truism that we have either knowledge of the physical world or a practical substitute for such knowledge, these thinkers go on to conclude, by what must remain a pure fiction from their point of view, that the datum is the essence, or a part of the essence, of the independently existing thing. In other words, though not what the physical thing is existentially, it may be reacted to as if it were that, and so by a convenient fiction it may be taken as if it were what the thing is. For all practical purposes it may be taken as if it were the thing, that is, as its nominal or practical essence. Thus the concept of essence makes it possible to complete the disguise of the original and underlying

epistemological dualism. The first step in this process was the fictitious identification of the external datum with something inside the head, as having there its only real existence, and the second step is the identification, equally fictitious from the point of view of its presuppositions, of this same datum with the external physical thing, as being its essence. Thus by a double fiction Drake and Strong get back to what they call knowledge of the external thing, although all their theory allows for is the substitution of a practical makeshift for real knowledge; they leave no place for knowledge in the sense of direct or directly verifiable awareness of the independently existing physical reality. Thus we seem to be virtually back at the point of view of Strong's article, "Substitutionalism," published in 1908, according to which our perceptual knowledge remains purely substitutional and indirect, like memory.

Now this solution of the problem of knowledge seems merely verbal, not a real solution. We do not deny that Drake and Strong have knowledge of the physical world; not only do they have knowledge, but, as we would maintain, in perception they have direct awareness of independently existing physical things. But they have this knowledge of external things, not because their theory of knowledge is a true theory, but just because it is not a true description of their own cognitive processes. It is because the first fiction referred to was a gratuitous departure from the facts that the second fiction became necessary before it was possible to return to a point of view from which there could be a consistent claim to even a semblance of knowledge. In view of what has been said, then, it will be seen that the successive modifications of Professor Drake's statements of the epistemological position in the three works cited must seem to us to be evidence, not of any radical shifting of base, but rather of a series of changes in tactics. The theory is not a genuine epistemological monism; the escape from epistemological dualism is only verbal. The difficulties, however, which prevent acceptance of Drake's revised critical realism, we repeat, lie not in the author's statement of his case; they are difficulties of the position, not of the exposition. But we must now let the defendant speak for himself.

Perception, it is maintained, is to a great extent untruthful, bringing before our minds characters which do not exist at all, even in any "subjective" realm (p. 22). That they are "given" and "out there" does not mean that they have any existence (p. 34). Hallucination is seeing what is not there; but something must exist, or we should not see these homeless, non-existent data, and so we must suppose that what exists is a mental state (pp. 75, 161), and since "nothing exists except in space and time" (p. 159), this mental

existence can only mean existence as a brain-event in the head (pp. 26, 62).

But not only is it maintained that the data of hallucinatory experience do not exist; strictly speaking, no data of consciousness, *as such,* exist—although when we speak less precisely we may say that if our knowledge is veridical knowledge of existents, the data of our experience exist (p. 9). But no data of experience have any existential status of their own (pp. 32, 77). The "object seen" is not, as such, identical with the physical thing as such, nor yet with the cerebral complex as such; it is merely a non-existent item in our universe of discourse (p. 145). In fact all data of consciousness are, as such, non-existent; they are mere fiction, imaginary character-complexes (pp. 184, 188, 190).

In a sense, then, but only in a Pickwickian sense, it would seem, may some sensa and other data be said to exist as physical things, objects in space (pp. 23, 27, 132). While theoretically the existence of sensa or data ought not to be affirmed, their existence *is* affirmed, and while this can not be done with certainty, it is nevertheless practically justifiable "in so far as we are cognizing existents and our knowledge is veridical" (pp. 59, 33). Perception is veridical when the outer existent supposed is the existent which affects us (p. 32), even if some of the qualities which that supposed existent is commonly supposed to have are not really there (p. 33). Strictly speaking, the perception is veridical in so far only as the object before the mind is identical with what really exists (p. 65).

More explicitly, perceived colors are products of the organism falsely imputed to the thing, while geometric forms are rightly imputed to it (pp. 71, 72, 189). Thus the data of perception are misdescriptions of inner (that is, cerebral) events. The sensa which seem to be out there are merely imagined or supposed to be there (pp. 26, 27). "The datum of consciousness bears the marks of mistaken reference, of wrong description, and is therefore an imaginary entity" (p. 183). This false attribution to a point in outer space of character-complexes which have their existence as sensations in the brain is what is meant by projection, a process which is the consequence of bodily adjustment to the datum falsely interpreted as really out there (pp. 30, 70, 142). Qualities are imputations made by organisms. A given sensation is referred to a given point of space because it evokes a bodily adjustment to an object at that point of space (pp. 131, 140).[1]

That Professor Drake's escape from epistemological dualism is

[1] There is a valuable suggestion here. If only it were dissociated from the dualistic theory of knowledge and the rather materialistic theory of mind with which it is weighted down in Drake's system, good use might be made of it.

only verbal, as we have suggested, receives confirmation from the agnostic tendency manifest throughout the book. Unable, on his theory, to make any distinction between knowledge and mere belief of what happens to be true, knowledge is necessarily left incompletely defined as the relation of identity between the datum and the object cognized (p. 50). Affirmation of existence is confessedly uncertain (p. 8). Ignoring the possibility of refutation through demonstrated self-contradiction, it is declared that no metaphysical view can be refuted (p. 16). It is admitted that we can not know that perception gives us knowledge, even if we may believe that our supposed knowledge is actual when it works (pp. 48, 49). The appearance of a datum does not guarantee any existence beyond that of the body and its states, since what we "see" we do not really see, but only seem to see (pp. 178, 179).

Professor Drake seems to take comfort to himself from reflecting that if he can not know that he knows, all realists of whatever brand are in the same logical position, inasmuch as they affirm the independent existence of physical things only as an act of faith (pp. 44, 78). But this, we would say, is only a half-truth. The epistemological dualist perceives things and can have a science of physical reality, as truly as the monistic realist can. But this is true just because his dualism is not true. If dualism were true, we could never perceive outer physical reality, but only something else, either the contents of our own heads or perceptual data, or essences, incorrectly identified with external reality. If, however, monistic realism in any one of its possible forms is true, perception of physical reality is possible and actual, and the possibility of physical science is consistently explained. In other words, if we can experience the physical, we can test our ideas of it and know it; if we can never experience it, it does not seem that we can have knowledge of it. Since then we seem to have knowledge of it, it seems reasonable to believe that we experience it and that some form of monistic realism is true.

But let us examine some further features of the philosophy before us. As we have seen, mental states or processes are interpreted by Drake in physical terms. The psychic life, located in the brain, is part of the causal order of nature (pp. 59, 69). The colors we seem to see on things in space outside of our bodies are in real space to be sure, but the space they are in is the space within our heads, not the space outside of the body (p. 81). There is no subjective realm of existence; nothing exists except in space as well as in time (pp. 22, 159). The knower we know is an organism (p. 58). In the widest sense the self is the whole body; but the core

of the self is a set of sensori-motor events, the mechanism of the cerebrum and its co-ordinated processes (pp. 214, 218). There is no non-material soul, or self (pp. 100, 123, 209, 225, 232). A mind is a part of nature, a bodily organ which has spatial mental states (pp. x, 68). This neural mechanism constitutes the existential basis for the appearance of the non-existing data (p. 161); its processes are as truly material processes as those of any part of the external world (p. 242).

This is reminiscent of behaviorism, but, it is pointed out, mind is not merely behavior (pp. x, 60). The behaviorists are essentially right (p. 185); consciousness is *truly*, but not *fully*, describable in terms of physics and behavioristic psychology (pp. 61, 185). All the existents in a case of consciousness can be described in physical terms, and this is all that the behaviorist sees. He is interested exclusively in the world of existence; the world of appearance he ignores (p. 186). The behaviorists would be right if only they would acknowledge the psychic character of cerebral events; as it is they are unable to account for the appearance of non-existing objects as items of conscious experience (p. 164). They are right when they say that consciousness does not exist; it can not be found either in the brain or outside of the brain (p. 186); it is simply a function of the sentient organism (p. 187). But our co-ordinated receptive and reactive processes are not merely physical behavior; they are psychic in their inner nature (p. 222). They are characterized by consciousness, that is, the use by an organism of certain inner states as meaning (or being signs of) outer events, the virtual presence in the outer world of what exists only in the brain (pp. 175, 176).

Professor Drake acknowledges that his theory is " 'materialistic' in a sense" (p. 243). He claims, however, that by the device of panpsychism the undesirable practical consequences of materialism as ordinarily understood are avoided; the materialism of the theory "loses its sting" (p. 243). To the reviewer, however, it would seem truer to say that so much has been yielded to materialism that it is only by some such philosophical *tour de force* as panpsychism that the validity of spiritual values can be maintained, if, indeed, from the point of view of any such panphysical panpsychism they can be logically maintained at all. The doubt becomes especially insistent when we remember that the "panpsychism" offered for our acceptance, while it assumes that all reality is physical, material, carefully refrains from asserting that all is also mental; all that is ventured is the view that, in so far as it is not mental, it is "mind-stuff" (pp. 97, 99).

In his final chapters the author touches in gingerly fashion upon some of the questions which naturally arise as to the meaning of his theory for the validity of moral and religious values. His words are evidently meant to be reassuring, but they are vague in the extreme. There is still ample room, we are told, for anyone's will to believe (p. 244). As for freedom, there is no ground for saying that we have not free will in the empirical sense (p. 234), and the view presented, while materialistic in a sense, is not necessarily mechanistic; we can not deny that there may be some free action in the working of the brain (pp. 251, 252). As for a future life, no theory can show how individual immortality can be a fact; it is a sheer assumption, even in metaphysical dualism. The belief is usually held on religious grounds, and no psychological theory is better off in this respect than any other (p. 244). To be sure, in the theory presented human consciousness is a function of the living organism; it is only the organism which is conscious (pp. 245, 248); but it is conceivable that there is an ethereal counterpart of the material brain which may survive the dissolution of the latter (p. 243). In general, the question is left open as to whether there may not be more to the self and to nature than the theory distinctly provides for (p. 237). There is "mystery enough left, Heaven knows" (p. 255). Thus, while no positive basis is offered for affirming either freedom, immortality, or the existence of God in the common understanding of the term, and while the materialistic feature of the view strongly suggests a negative conclusion, it does not necessarily involve, it is claimed, any conclusive argument against the validity of such beliefs.

This may be so, and those who feel forced to agree with Professor Drake in his philosophical views may be left with such comfort as they can gain from these meager assurances. The primary question is whether the philosophy in question is a necessary, or the only possible, solution of the problems with which it deals, or even the most reasonable interpretation of the facts in the case. The theory of one universal psychical substance is offered as explaining "more simply and comprehensively than any other theory the observed peculiarities of experience" (p. xi). Physical science can only describe the processes of reality in physical terms; what the inner stuff of the units it deals with may be, it can not tell us (p. 57). There is difficulty in thinking of mental states and cerebral events either as separate interacting entities or as independent parallel processes; may they not rather be the same thing under different aspects; may not the mental states be the very substance of the cerebral events (pp. 79, 87, 90)? Since the content of our

experience is psychic stuff arranged in a physical pattern, may not the constitution of the whole world be essentially similar (p. 91)? This does not mean that all physical reality is conscious, or has awareness; it is the organism that is aware, not the units of which it is composed (p. 97). Panpsychism is to be interpreted as meaning only that mind-stuff, not mind itself, is universal (p. 99).

After all, then, Professor Drake has not been able to bring to the support of his theory any very strong argument. He makes the plea that his view is permissible, that it is difficult to accept either of its alternatives, parallelism and interactionism, and that no more satisfactory solution of the problem of knowledge is attainable. This is not the place to attempt to substantiate a contrary view, but we would hazard the opinion that with a non-material view of mind and an activistic interpretation of sensation and perception it ought to be possible, not only to find a place for real knowledge in the sense of verifiably true judgments resting on direct perceptual awareness of physical reality, but also to accept interaction with less "difficulty" than would be involved in believing that all matter is psychical and that all mind is physical and even material.

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Holism and Evolution. J. C. SMUTS. New York: Macmillan Co. 1926. Pp. vii + 362.

Although British civilization has not made its philosophers kings it must by this time be quite accustomed to seeing its public men become philosophers. The distinguished author of this book, with the conviction that the present situation in philosophy needs fresh points of view and new coördinations (p. 7), presents an introductory study of the metaphysics of "holism," coining the term in the attempt to indicate the original unity from which science has abstracted structures, regarding them as mechanistic, and philosophy has abstracted principles, leaving them "in the air" (p. 91). Holism, the operative factor in the evolution of wholes (p. 99), is thus a view-point, a category, and an activity (p. 158). The best examples of it in the cosmos are apparently atoms and molecules (p. 128), cells (p. 228), and personality ((p. 284). While a society (p. 339), mind (p. 224), and the universe (p. 343) are severally holistic, they are not "real" wholes. The status of ideal wholes and absolute values is to be more fully discussed in a sequel (p. 305). We do not know how the new actually arises from the old (p. 332); but among contemporary theories that of creative synthesis (p. 87) or epigenesis (p. 90) is preferred to emergence, which is regarded as but one feature of a whole (p. 321, n. 1).

According to the author, holism may be expected to reconcile

the one-sided views of mechanism and vitalism (p. 146), and of naturalism and idealism (p. 330), without recourse to panpsychism (p. 77) or teleology (p. 342). Holism leads to comprehension of the relations of subject and object (p. 238), self and not-self (p. 243), and body and mind (p. 271). It transforms the problem of causality (p. 119). It makes possible a biology in which the difficulties of the principle of conservation of energy (p. 167), as well as of natural selection (p. 209), may be adjusted. In psychology it leads to a suggestion that there may be a subtle holistic sense behind the other senses (p. 256), to a view of purposive acts as holistic (p. 258), and to a theory of freedom (p. 306). Some of the interesting by-products are the consideration of the "fields" surrounding matter, cells, and minds, and the suggestion of a new science of "personology."

For the professionally-trained reader the book contains too many repetitions and summaries, although these features may be of advantage in a semi-popular treatment such as apparently is intended. In general, it says about all that can be said on the subject without entering upon one or the other of two very formidable tasks which now confront the workers in this and allied theories of metaphysics. The first of these, as indicated in Lovejoy's paper at the recent Congress of Philosophy, is a more thorough logical study of wholeness or whole-making, under whatever term it is known—all the way from Spencer's "integration" to Whitehead's "organic mechanism" and R. B. Perry's "collective novelty." Strict logical analysis would level some criticisms against Smuts' treatment of holism; one could, for instance, hardly say that "the whole is nothing but the specific synthesis of the parts and not something additional to them" (p. 126), and at the same time see in the active free power of the organism "a new non-mechanical element X of a holistic character" (p. 306). The other task seems to be that of detailed and comprehensive studies of the empirical data, which Smuts explicitly leaves for others. In spite of his disclaimers, there is a good deal of empirical detail (usually without citations) in his book, and the percentage of human error is not high enough to be seriously considered. But a more comprehensive study, I think, would have to include the earth, if not the solar system and the galaxy, among the "wholes," and thus would have to regard mechanism as more powerfully represented than merely by the atoms and chemical compounds. A study of the data in systematic detail would, I think, corroborate the general principle of holism (though a whole by any other name would sound as sweet!) and at the same time throw much additional light on metaphysics.

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JOURNALS AND NEW BOOKS

SCIENTIA. Vol. XLI, N. CLXXVIII–2. Una teoria matematica sulla lotta per l'esistenza: *V. Volterra.* Die geophysikalischen Grundlagen der Theorie der Kontinentenverschiebung: *A. Wegener.* Modern Views of the Mechanism of Carbon Assimilation: *W. Stiles.* Le Congrès International de Psychologie de Groningue: *E. Rignano.*

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Bibliographie der Philosophie u. Psychologie des Jahres 1926 (7 Jahrgang). Leipzig: Wilhelm Heims. 1927. 32 pp. .80M.

University of Chicago: Abstracts of Theses. Humanistic Series, Vol. III, 1924–1925. Chicago: University of Chicago Press. 1926. x + 431 pp.

Eckstein, Walther: Das antike Naturrecht in sozialphilosophischer Beleuchtung. (Soziologie und Sozialphilosophie Schriften der Soziologischen Gesellschaft in Wien, II.) Wien: Wilhelm Braumüller. 1926. 135 pp. 3.50 M.

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Souriau, Michel: La Fonction Pratique de la Finalité. (Bibliothèque de Philosophie Contemporaine). Paris: Félix Alcan. 1925. 263 pp. 25 frs.

NOTES AND NEWS

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EDGAR S. BRIGHTMAN,
Editor.

A new philosophical society has recently been formed in Philadelphia, composed of teachers of philosophy in the city of Philadelphia and its vicinity. The society meets on the second Saturday of each month at Hamilton Court, 39th and Chestnut Streets, for a paper, refreshments, and philosophical discussion. At the three meetings so far held, papers have been presented by Theodore de Laguna, Bryn Mawr College, Brand Blanshard, Swarthmore College, and Edgar A. Singer, Jr., the University of Pennsylvania. In honor of the late Professor George Stuart Fullerton, the society has christened itself "The Fullerton Club."

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